

IN THE CLAIMS

Please amend claims as follows:

1. (Currently Amended) A system comprising:
a wavelet-based image processing path to enhance an input image in a wavelet domain,
wherein the processing path includes a unit to sharpen or smooth text and image regions of the image data corresponding to the input image, wherein the unit is operable to perform denoising by thresholding coefficients generated from the application of a forward wavelet transform to generate denoised coefficients, and rescale the denoised coefficients with a level-dependent parameter to sharpen or smooth the denoised coefficients; and
a print engine coupled to the processing path.
2. (Previously presented) The system defined in Claim 1 wherein the image processing path comprises:
a forward wavelet transform;
one or more wavelet-based processing blocks; and
an inverse wavelet transform.
3. (Previously presented) The system defined in Claim 2 wherein the forward wavelet transform comprises a critically sampled wavelet transform.
4. (Previously presented) The system defined in Claim 2 wherein the forward wavelet transform comprises an overcomplete wavelet transform.

5. (Previously presented) The system defined in Claim 2 wherein the forward wavelet transform comprises a Haar wavelet transform.

6. (Previously presented) A system defined in Claim 2 wherein the forward wavelet transform comprises a 5,3 wavelet transform.

7. (Previously presented) A system defined in Claim 2 wherein the forward wavelet transform comprises a 2,6 wavelet transform.

8. (Previously presented) A system defined in Claim 2 wherein the forward wavelet transform comprises a complex wavelet transform.

9. (Previously presented) A system defined in Claim 2 wherein the forward wavelet transform comprises a limited redundancy wavelet transform.

10 – 37 (Previously Cancelled)

38. (Previously presented) The system defined in Claim 1 further comprising an input operable to receive the input image from an external source and a scanner for generating the input image, wherein the input and the scanner are coupled to the image processing path.

39. (Currently Amended) A method comprising:

processing an input image by enhancing the input image, including applying a forward wavelet transform to create a plurality of coefficients and filtering coefficients with a coefficient domain operator in a wavelet domain, including sharpening or smoothing text and image data in the wavelet domain corresponding to the input image, wherein the sharpening or smoothing is accomplished by performing denoising by thresholding coefficients generated by applying the forward wavelet transform to generate denoised coefficients, and rescaling the denoised coefficients with a level-dependent parameter to sharpen or smooth the denoised coefficients; and outputting a processed image.

40. (Previously presented) The method defined in Claim 39 further comprising: applying one or more wavelet-based processing blocks to coefficients resulting from applying the forward wavelet transform; and applying an inverse wavelet transform.

41. (Previously presented) The method defined in Claim 40 wherein the forward wavelet transform comprises a critically sampled wavelet transform.

42. (Previously presented) The method defined in Claim 40 wherein the forward wavelet transform comprises an overcomplete wavelet transform.

43. (Previously presented) The method defined in Claim 40 wherein the forward wavelet transform comprises a Haar wavelet transform.

44. (Previously presented) A system defined in Claim 40 wherein the forward wavelet transform comprises a 5,3 wavelet transform.

45. (Previously presented) A system defined in Claim 40 wherein the forward wavelet transform comprises a 2,6 wavelet transform.

46. (Previously presented) A system defined in Claim 40 wherein the forward wavelet transform comprises a complex wavelet transform.

47. (Previously presented) A system defined in Claim 40 wherein the forward wavelet transform comprises a limited redundancy wavelet transform.

48 – 83 (Previously Cancelled)

84. (Currently Amended) A method comprising:
applying a forward wavelet transform to image data_i[[:]]
performing denoising by thresholding coefficients generated by applying the forward wavelet transform to generate denoised coefficients;
rescaling the denoised coefficients with a level-dependent parameter to sharpen or smooth the denoised coefficients; and

filtering coefficients after rescaling.

85. (Previously presented) The method defined in Claim 84 further comprising sampling the wavelet coefficients.

86. (Previously presented) The method defined in Claim 84 further comprising applying an inverse wavelet transform on filtered coefficients.

87 – 118 (Previously Cancelled)

119. (Currently Amended) A copier having a wavelet-based image processing path for enhancing image data, wherein the processing path includes a unit to sharpen or smooth text and image regions of the image data corresponding to the image data, wherein the unit is to perform denoising by thresholding coefficients generated from the application of a forward wavelet transform to generate denoised coefficients, and rescale the denoised coefficients with a level-dependent parameter to sharpen or smooth the denoised coefficients.

120. (Currently Amended) A printer having a wavelet-based image processing path for enhancing image data, wherein the processing path includes a unit to sharpen or smooth text and image regions of the image data corresponding to the image data, wherein the unit is to perform denoising by thresholding coefficients generated from the application of a forward wavelet transform to generate denoised coefficients, and rescale the denoised coefficients with a level-dependent parameter to sharpen or smooth the denoised coefficients.

121. (Previously Presented) The system defined in Claim 1 wherein the image processing path further includes a classifier, the classifier to control reduction of image noise, smoothing of the image, and sharpening of the image.

122. (Previously Presented) The method defined in Claim 39 wherein the processing an in input image further includes applying a classifier to the plurality of coefficients prior to thresholding.

123. (Previously Presented) The method defined in Claim 84 further includes classifying the coefficients generated by the forward wavelet transform prior to denoising.